Central Office UNE Line Sharing Job Aid

Maintenance Line Sharing

Definition

Two service providers will share a single local copper cable pair to deliver their services to an end user. Allows Competitive Local Exchange Carriers (CLEC) access to the high frequency portion of a local (copper only) loop to provide xDSL service. BST must be providing the voice service on the shared loop. BellSouth will maintain control over the loop and splitter equipment in the central office.

Trouble Tickets

Separate tickets will be issued for Voice and Data troubles.

- Both Voice and Data trouble tickets will be issued via LMOS
- Both tickets will be delivered to the CO via WFA/DI
  - WFA/DI ticket types of ND will be issued

Voice Trouble Flow

- RRC or BRC will issue tickets on the voice side of shared circuits
- Existing POTS trouble resolution procedures will be used
- Existing ticket coding will be used, Ticket Closure Job Aid 201-400-100BT

Voice CO Responsibilities

- Perform trouble isolation
- When "No Trouble Found" in CO close ticket to "No Trouble Found" codes
- When trouble is found and cleared in CO close ticket
  - Use existing ticket closure codes for code 5's, add proper narrative

Data Trouble Flow

- UNE Center will issue tickets on data side of shared circuits
  - Ticket will have narrative "**Data Trouble Test Continuity**"
- When Trouble found in CO use existing Ticket Closure Job Aid 201-400-100BT

Continued on next page

Maintenance Line Sharing, Continued

Data CO Responsibilities

Step Action Table 1

Step	Action
1	ANAC TN at BS Cable Pair.
2	TN ANAC'd correctly? NO – ANAC at each cross connection point until wiring problem is found and corrected. Go to Step 3. YES – Go to Step 3.
3	Test continuity of jumpers between Splitter and CLEC CP.
4	Continuity test passed? NO – Test at each cross connection point until wiring problem is found and corrected. Go to Step 5. YES – Go to Data CO Responsibilities Step Action Table 2 Step 1.
5	***CO must contact CLEC and advise that trouble is cleared.***
6	Close ticket using existing ticket closure codes for code 5's, add proper narrative.

Continued on next page

Maintenance Line Sharing, Continued

Data CO Responsibilities

Step Action Table 2

Step	Action
1	***CO must contact CLEC and advise that trouble can not be found in the Central Office and ask which of the following steps they would like performed:*** Reseat Splitter Card – Go to Step 2 Replace Splitter Card – Go to Step 3 Change Splitter Port – Go to Step 4 Refer Trouble for Outside dispatch – Go to Step 5 Close trouble Report – Go to Step 6
2	CO will reseat card and advise CLEC when complete. CLEC will advise of any further steps needed.
3	CO will replace Splitter card and advise CLEC when complete. CLEC will advise of any further steps needed.
4	CO will rewire to splitter port requested by CLEC and advise CLEC when complete. CLEC will advise of any further steps needed.
5	Close WFA/DI ticket out using WP = 0, IST = 129, RTE/EC = 100 with narrative of "**NO DATA TROUBLE IN CO, REFERRED OUT**".
6	Close WFA/DI ticket using the following codes: Disposition Code = 0577, Cause Code = 300

Customer Contact Information

Customer contact information is found on the WFA/DI "DINDS" screen. This screen may be accessed in WFA/DI when on the "DICREQ" screen by pressing the "PF6" key.

[redacted]

Central Office UNE Line Sharing Job Aid

Provisioning Line Sharing

Definition

Two service providers will share a single local copper cable pair to deliver their services to an end user. Allows Competitive Local Exchange Carriers (CLEC) access to the high frequency portion of a local (copper only) loop to provide xDSL service. BST must be providing the voice service on the shared loop. BellSouth will maintain control over the loop and splitter equipment in the central office.

Architecture

Network elements consist of the high frequency range of a copper loop, the Network Interface Device (NID), and the splitter system. Line sharing requires that an unconditioned, 2-wire copper loop serve the end user. An unconditioned loop is a copper loop with no bridged taps, low-pass filters, range extenders, or similar devices. The CLEC's meet point is the point of termination for the CLECs equipment. BellSouth will use jumpers to connect the CLECs connecting block to the splitter. The splitter will route the high frequency portion of the circuit to the CLECs xDSL equipment in their collocation space. Line sharing is provided on locally switched POTS lines. A passive signal filter is installed at the customer's premises as CPE and is the responsibility of the customer (or CLEC). In some instances a splitter could be used at the end user's location. The CO splitter directs the voice band signals through a pair of copper wires to the switch, and the digital traffic through another pair of copper wires to the xDSL equipment in the CLEC's collocation space and attached to the CLEC's packet-switched network. See Figure 1 – Functional Block Diagram.

Continued on next page

Provisioning Line Sharing, Continued

CO Responsibilities

Rewire existing voice circuit through Splitter FRAME wiring block (See Figure 2)

Step	Action
1	Print COSMOS Frame Output per WFA/DI Load
2	Perform load coil test on cable pair.
3	Load coils detected? NO – Go to Step 4. YES – Place order in A6 Jeopardy in COSMOS with remark of "**Load Coils Detected, Refer To LCSC**".
4	Wire circuit on all Frames. (See NOTE 1)
5	Perform continuity test on jumper wired between CLEC Cable Pair and Splitter Block.
6	Continuity test passed? NO – Test continuity at each cross connection point until wiring error is found and corrected. Go to step 7. YES – Go to step 7.
7	ANAC TN at BellSouth Cable Pair.
8	ANAC'd correct TN? NO – ANAC at each cross connection point until wiring error is found and corrected. Go to Step 9. YES – Go to Step 9.
9	Complete order (ticket) in WFA/DI.

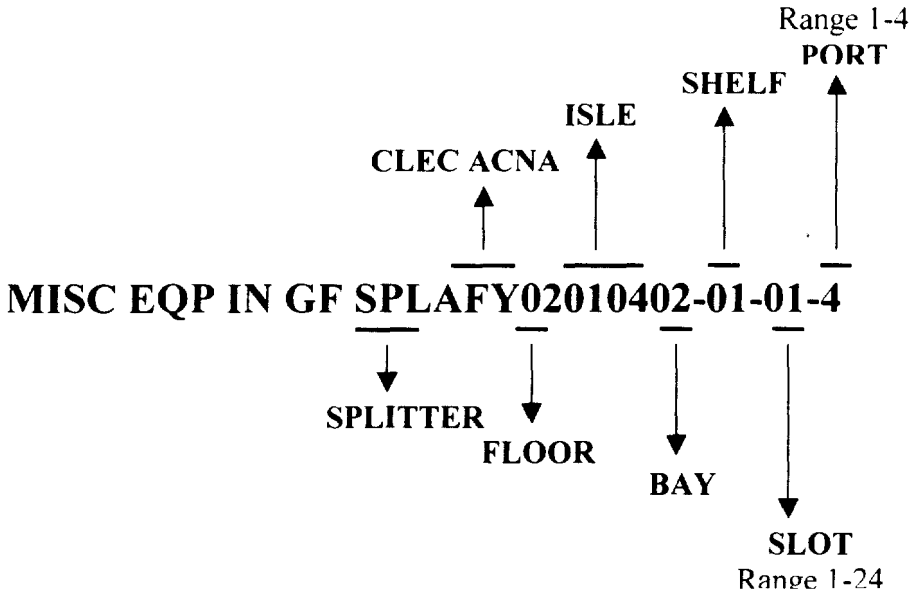
NOTE 1: The Splitter wiring block connections are as follows:
BS Cable Pair wired to CP pins
BS Office Equipment wired to OE pins
CLEC Cable Pair wired to XDSL pins

Provisioning Line Sharing, Continued

COSMOS Out-Put

See Figure 3

COSMOS Splitter Identification



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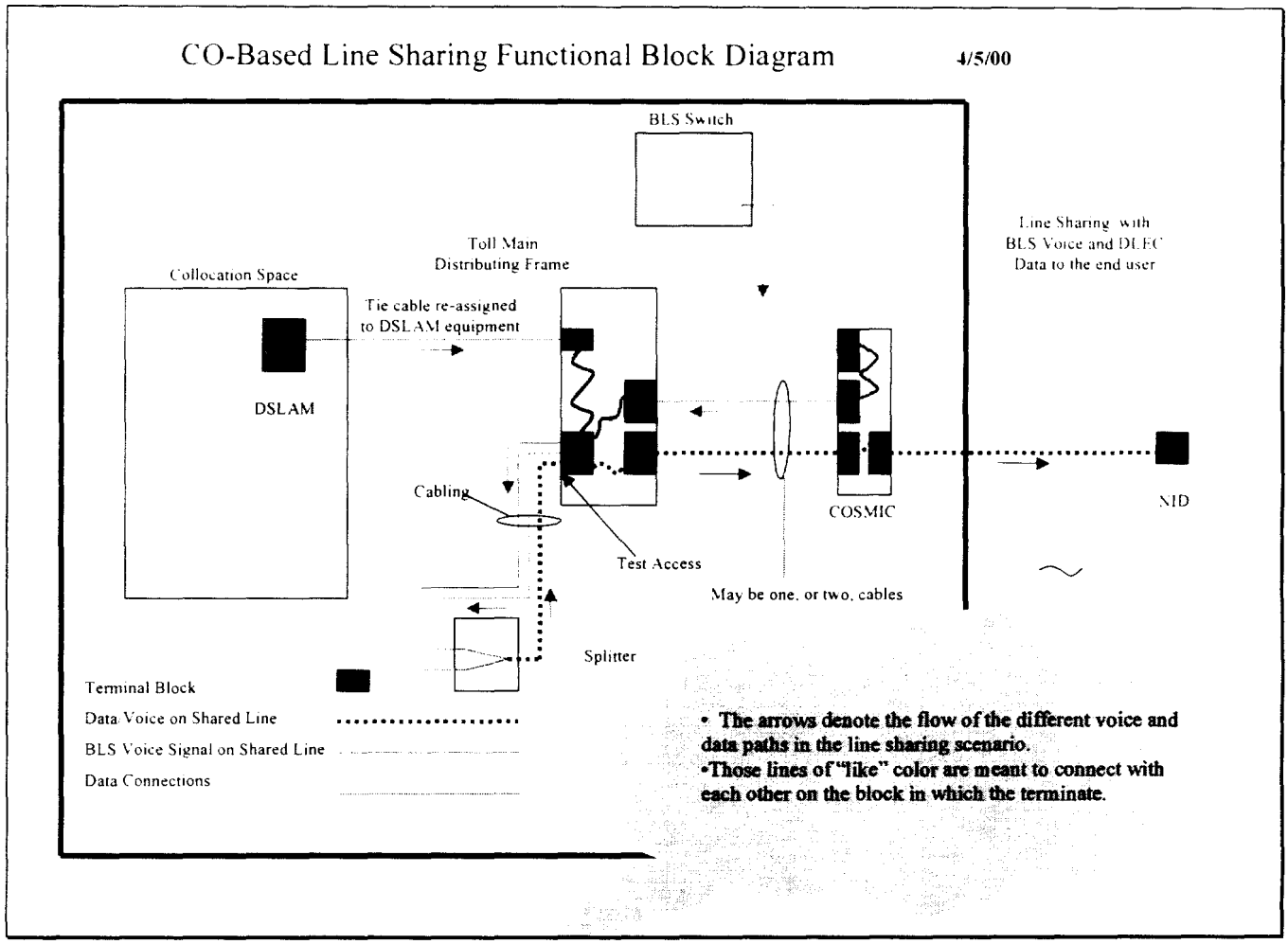
Provisioning Line Sharing, Continued

Figure 1 Functional Block Diagram



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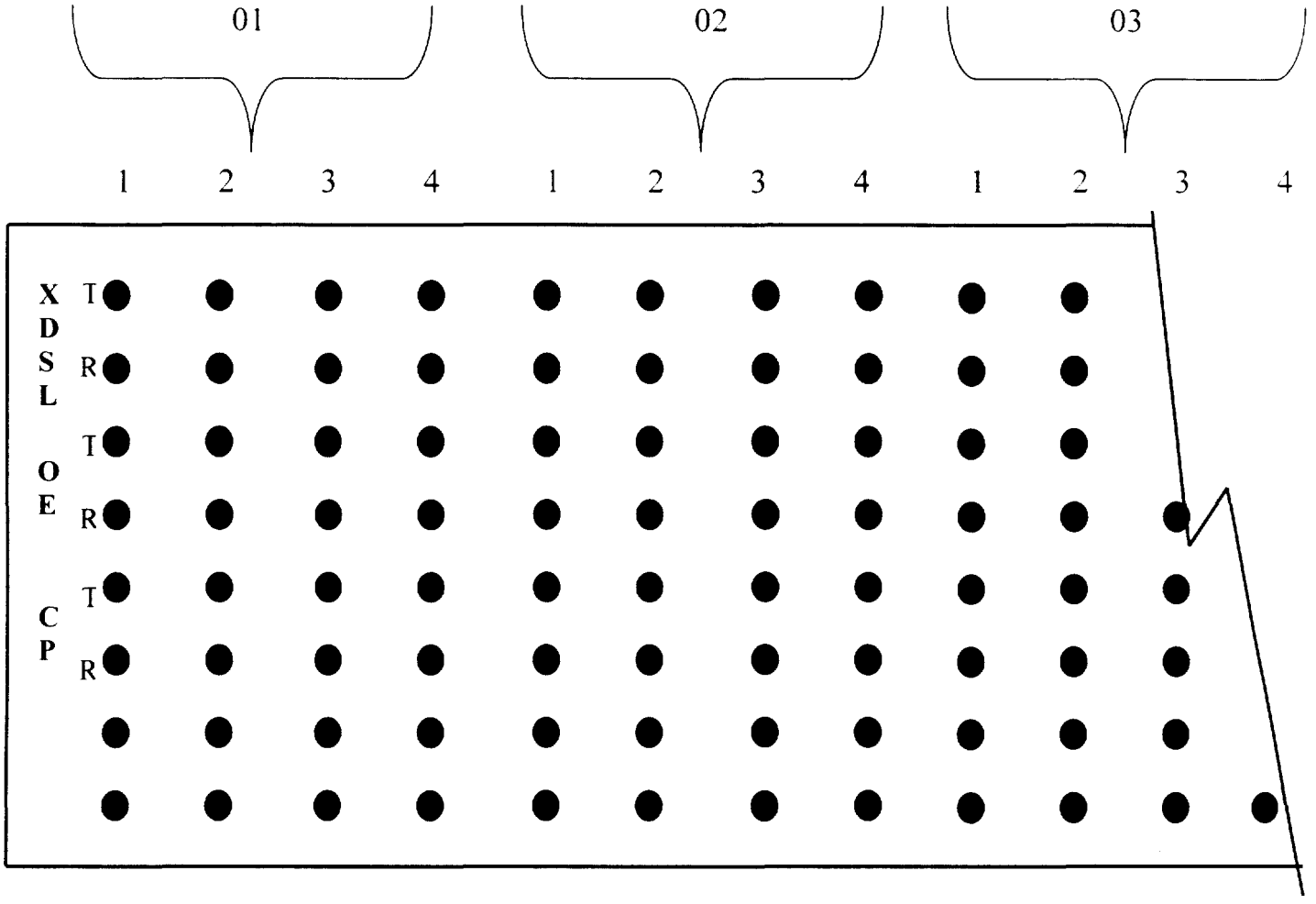
Provisioning Line Sharing, Continued

Figure 2 Frame Wiring Block Layout



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Provisioning Line Sharing, Continued

Figure 3 COSMOS Out-Put

```
[ZY]IC FWM
# CRD COBKP6G4
_`
0
4 P        04-03-00 CH  COBKP6G4              292-0025 01-24-00
-
0 LINE EQP REU              011-004-115
2
  LINE EQP REU     IFR    TNNL    F14-03-08U01-2-16
C
O TIE PAIR IN           PT01-0001
B
K TIE PAIR     FA0-01             14004
P
6 MISC EQP IN  GF   SPLAKJ02010404-01-01-1         FA0-01
G
4                                  DPA 999

  TIE PAIR IN           PT03-0001

  TIE PAIR     FA0-01             F20-01

  MISC EQP IN  GF   PAKJ1-0001                    F20-01

                                   DPA 999

 *MISC EQP IN  GF   SPLAKJ02010404-01-01-1         FA0-01
2
9                                  DPA 999
2
-
0
0
2 DATE: 04-03-00     10:15               04-02 17:06 PAGE  1
5

0
4 TIE PAIR IN           PT01-0002
-
0 TIE PAIR     FA0-01             14004
2
  CABLE PR REU             2-0943 F14-02-02U08-2-18             8-2-43
C
O TEL/CKT  REU     292-0025                 NPA404
B
K
P
6
G
4
2
9
2
- IN-OE TP CP/OUT-OE TP CP/COMP DATE INIT/TEST DATE INIT/SCM DATE INIT
0
0
2 DATE: 04-03-00     10:15               04-02 17:06 PAGE  2   LAST
5                                        THIS IS A REPRINT
**FWM COMPLETED
[ZY]IC%
```

Continued on next page

Provisioning Line Sharing, Continued

```
[ZY;IC  SOI
H ORD COBKP6G4
_.

                APR 03, 2000    10:14:58  AM

             SERVICE ORDER ASSIGNMENT INQUIRY


ORD COBKP6G4                OT(CH)   ST(AC- )   FACS(YES)
   AECN(7177)
   DD(01-24-00)  FDD(04-02-00)  EST(04-02:17)  SG(P)
   MDF WORK REQ(YES)  MDF COMPL(NO)  LAC COMPL(NO)   FOR(YES)  RCP(NO)
OE  011-004-115
    ST WK          DATE 03-30-00    CS RES       US 1FR      FEA TNNL
    LCC 1FR
    LOC WF14003
TN  404-292-0025
    ST WK          DATE 03-13-00    TYPE X
CP  2-0943
    ST WK          DATE 03-30-00     RZ 13
    LOC WF14003
TP  PT01-0001
    ST SF  PC      FS WK   DATE 03-30-00
    LOC  F14004
    LOC  FA0001
GF  SPLAKJ02010404-01-01-1
    ST SF  PC      FS WK     CONN S+    DPA 999
    LOC  FA0001
TP  PT03-0001
    ST SF  PC      FS WK   DATE 03-30-00
    LOC  F20001
    LOC  FA0001
GF  PAKJ1-0001
    ST SF  PC      FS WK     DPA 999
    LOC  F20001
TP  PT01-0002
    ST SF  PC      FS WK   DATE 03-30-00
    LOC  F14004
    LOC  FA0001
** SOI COMPLETED
```

[redacted]

COSMOS

Line Sharing (CO Based)

Unbundled Network Element

April 30, 2000

I. **Market Service Description (MSD)**

1.0 Basic Service Features

In the Advanced Services Docket (CC Docket No. 98-147) the FCC ordered BellSouth and other incumbent local exchange carriers (ILECs) to unbundle the high frequency portion of the local loop and make available a new unbundled network element (UNE) for its CLEC customers. In CC Docket No. 96-98 (319 Remand) the FCC directed BellSouth and other ILECs to allow CLECs sub-loop access at any accessible interconnection point on the loop (except closed splices). This is essentially collocation of xDSL equipment at remote terminals and other points of access in the loop and the provisioning of line sharing on the sub-loop to the end user's location.

There will be two line sharing products. This Market Service Description (MSD) addresses the product that originates at the central office and terminates at the NID at the end user's location. The other product is a sub-loop product that originates at the remote terminal or other places along the loop, and terminates at the NID at the end user's location. This product will be addressed in a separate MSD. Both products will be developed concurrently. However, development of the CO originated product will be begin first.

CLECs will use these UNEs to provide xDSL-based services for their end user customers. The remainder of the loop will continue to provide voice grade service from BellSouth.

The end user must currently have his analog voice service from BellSouth for the CLEC to buy this UNE. BellSouth currently has wholesale offering for ADSL, which is provisioned on the same loop with POTS.

2.0 Basic Service Capabilities

The central office based product offering is for a 2-Way line side copper loop to originate at a splitter in the serving wire center. The splitter will route the high frequency portion of the circuit to the CLECs xDSL equipment in their collocation space. The low frequency portion of the local loop spectrum (from 300 Hertz to at least 3000 Hertz, and potentially up to 3400 Hertz, depending on equipment and facilities) will be routed to the toll main distribution frame (TMDF) in the serving wire center.

A passive signal filter is installed at the customer's premises as CPE and is the responsibility of the customer (or CLEC). In some instances a splitter could be used at the end user's location.

A splitter bifurcates the digital and voiceband signals, directing the voiceband signals through a pair of copper wires to the switch, and the digital traffic though another pair of copper wires to the xDSL equipment in the CLEC's collocation space and attached to the CLEC's packet-switched network.

BellSouth must provide this UNE to only a single requesting carrier, for use at the same

customer address as the analog voice service provided by the incumbent. We will not provide this UNE if we are not currently providing analog voice service to the customer.

To ensure that line sharing does not significantly degrade analog voice service, BellSouth will provide this service only to carriers seeking to provide xDSL-based service that uses only the upper range of the spectrum. Currently, ADSL is the most widely deployed line sharing technology meeting that requirement. As additional xDSL-based technologies demonstrate they can co-exist on the same loop as analog voice service without significantly degrading voice service BellSouth will permit requesting carriers to deploy those technologies.

xDSL technologies that the FCC considered, at the time of the order, acceptable for shared-line deployment are:

- All types of ADSL
- Rate-Adaptive DSL
- Multiple Virtual Lines (MVL)

All of these technologies reserve the voiceband frequency range for non-DSL traffic.

During the pilot splitter deployment BellSouth will offer line sharing only for ADSL and only when conditioning is not required. BellSouth will offer this service for other xDSL technologies on June 9, 2000, when the service becomes generally available. BellSouth will also accept requests to condition lines for this service beginning with the service's availability date, June 9. A conditioned loop is a copper loop from which bridge taps, low-pass filters, range extenders, and similar devices have been removed.

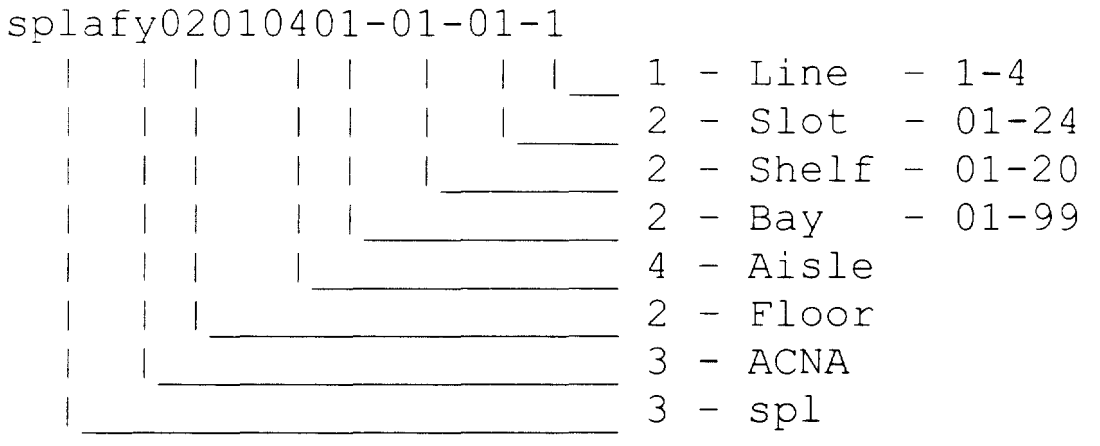
BellSouth will condition loops for this service unless doing so will significantly degrade voiceband services. If particular loops cannot be conditioned to provide this service and satisfactory voice service we will look for alternative loops that can be used or conditioned to enable line sharing. Although loops of 18,000 feet or shorter normally should not require voice-transmission enhancing devices, these devices are sometimes present on such loops. BellSouth will charge for conditioning loops for line sharing.

The FCC ordered incumbent LECs to unbundle the high frequency portion of the loop even where the voice customer is served by digital loop carrier (DLC) facilities. The FCC noted that the functionality required to accomplish line sharing on DLC systems might not be available by the effective date of our spectrum unbundling rules. BellSouth will attempt to find available copper loops when line sharing is requested lines served by DLC. New copper facilities will not be installed to satisfy these requests.

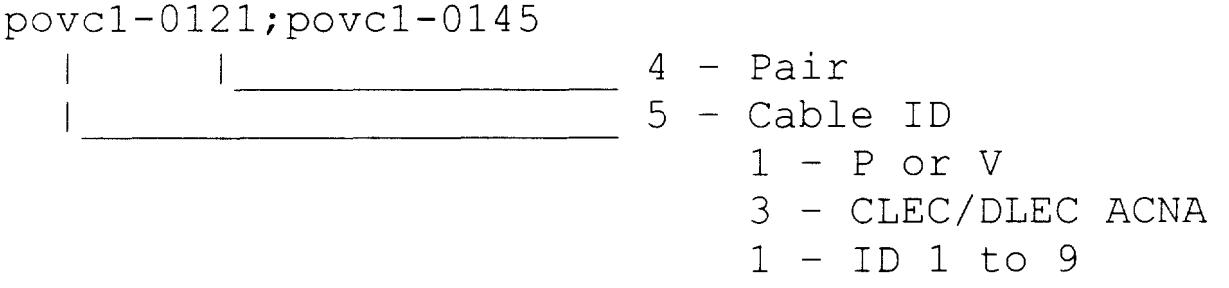
BellSouth will maintain control over the loop and splitter equipment in the central office and functions. The data CLEC will be given test access where the splitter is terminated at the TMDF.

If the customer terminates its voice service, for whatever reason, this UNE will be removed for that customer. The CLEC must be notified that the line no longer is eligible for line sharing. If the CLEC wishes to continue providing xDSL service to this end user they may purchase the full stand-alone loop network element.

Line Sharing - Splitter Example - GF Facilities



CLEC/DLEC Cable Example - GF Facilities



FEX to Add Splitter Facilities to Inventory
Splitter ID's should be 22 Characters including the Dashes. See Splitter example on previous page.

```
zy-ic% fex
**facility file initialization
**table or file ?
t
**add delete change or sort ?
a
**fid
gf
**beginning id
spllec02010401-01-01-1
**ending id
spllec02010401-01-03-4
**input parsing data
!14,0!1,0!2,1!1,0!2,1!1,0!1,1
**is this a duplicate entry ?
no
** range allocated as follows: if000676 - if000687
**fid
.
**table changed - shall it be sorted ?
yes
**fex will now execute fsc, summarize mode (no need to enter mode)
** add delete or summarize
** summarizing fd and ds file entries
**   36 entries for ds record zero
**   36 entries for fd record zero
** transaction completed
** fex completed



zy-ic% fex
**facility file initialization
**table or file ?
f
**initialize, reinitialize, or delete ?
i
** range, file, or all ?
r
** enter start record number (fnxxxxxx)
if000676
** enter end record number (fnxxxxxx)
if000687
**enter facility status (1 char) or linefeed for default
s
** range, file, or all ?
.
** fex completed
```

IFL to Add Frame Locations - Splitter locations could be on Either the BellSouth Frames or CLEC/DLEC PotFrame

```
zy-ic% ifl
h gf spllec02010402-01-01-1;spllec02010402-01-03-4
_i cl f20-01-004h
_.

**       12 facilities processed

**ifl completed


zy-ic%
```

IFINIT to setup for Connectivity

```
Zy-ic% ifinit
h gf spllec02010401-01-01-1;spllec02010401-01-03-4
i pid conn/data s+
.

**ifinit completed
```

FEX CLEC/DLEC Cable into GF Facilities - Cable & pairs are Duplicate ID's that are in the Cable Pair File. The cable Id's and pairs will be supplied by the Engineer. A minimum of 24 pairs per cable count should be added. The Cables in the Cable Pair File need to have Remarks against the Facilities and put a status of Unequipped.

```
zy-ic% fex
**facility file initialization
**table or file ?
t
**add delete change or sort ?
a
**fid
gf
**beginning id
plec1-0001
**ending id
plec1-0100
**input parsing data
!5,0!1,0!4,1
**is this a duplicate entry ?
no
** range allocated as follows: if000712 - if000811
**fid
.
**table changed - shall it be sorted ?
yes
**fex will now execute fsc, summarize mode (no need to enter mode)
** add delete or summarize
** summarizing fd and ds file entries
**   36 entries for ds record zero
**   36 entries for fd record zero
** transaction completed
** fex completed
```

```
zy-ic% fex
**facility file initialization
**table or file ?
f
**initialize, reinitialize, or delete ?
i
** range, file, or all ?
r
```

```
** enter start record number (fnxxxxxx)
if000712
** enter end record number (fnxxxxxx)
if000811
**enter facility status (1 char) or linefeed for default
s
** range, file, or all ?
.
** fex completed
```

IFL - Add Locations to CLEC/DLEC Cables in the GF File.
The vertical data for the GF cable can be retrieved by Looking at the VC file associated with the CP cable.

```
zy-ic% ifl
h gf plec1-0001;plec1-0100
_i c1 f20-01-005h
_.

**      100 facilities processed

**ifl completed
```

CDA - Add Remarks to the CLEC/DLEC Cables in the CP File.

```
zy-ic% cda
h cp plec1-0001;plec1-0100
i prp hold-lineshare
.
```

CDA - Exclude CLEC/DLEC Cable in CP File.

```
zy-ic% cda
h cp plec1-0001;plec1-0100
i stp unq
.
```

**** If you get an error, that says that it can't change status, check the pairs. If they are pending or any type of working status, report this to the Engineer. These pairs can not be working in both the Cable File and the GF File.**